

LISTING OF CLAIMS

1. (Cancelled)

2. (Previously presented) A medical apparatus comprising:
an intravascular device comprising a contracted configuration and an expanded configuration, said intravascular device comprising an elongate wire receiving unit having an open ended channel extending therethrough for receiving a guidewire;; and,

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said guidewire comprising an elongate body extending along a longitudinal axis between a proximal end and a distal end and an expandable and contractable stop member mounted thereon which is movable between a first contracted position and a second expanded position, said expandable and contractable stop member being dimensioned to pass through said channel in the first contracted position and being dimensioned in the second expanded position thereof to have an outer dimension which is greater than the inner dimension of said channel but less than the outer dimension of said intravascular device in the expanded configuration thereof, and said elongate body comprising an outer dimension which is less than the inner dimension of said channel to permit free movement of said guidewire relative to said intravascular device within said channel in opposite directions along the longitudinal axis of said guidewire.

2 3. (Previously presented) The apparatus of claim 2 wherein said expandable and contractable stop member is spaced from both the proximal and distal ends of said guidewire body.

3 4. (Previously presented) The apparatus of claim 2 wherein said expandable and contractable stop member includes a thin walled body member mounted upon and surrounding said guidewire and dimensioned to pass with said guidewire through said channel in the first contracted position of said contractable stop member, said thin walled body member comprising a body member distal end portion secured to said guidewire and a sliding portion extending toward the proximal end of said guidewire, said sliding portion being longitudinally slidable relative to said guidewire toward the distal end of said guidewire to cause the thin walled body member to bow outwardly from said guidewire adjacent to the body member distal end portion to form the second expanded position of said expandable and contractable stop member.

4 5. (Previously presented) The apparatus of claim 2 wherein said guidewire is formed with an internal chamber extending from the proximal end of said guidewire toward said distal end

thereof, and a stop member operating mechanism is mounted in said internal chamber to move said expandable and contractable stop member between said first contracted and second expanded positions.

5/ 6. (Previously presented) The apparatus of claim 5 wherein said guidewire body comprises at least one opening formed to extend into said internal chamber, said expandable and contractable stop member comprising at least one stop unit retractable through said opening into said internal chamber to the first contractable position of said expandable and contractable stop member and extendable outwardly through said opening to the second expanded position of said expandable and contractable stop member.

6/ 7. (Previously presented) The apparatus of claim 6 wherein said at least one stop unit comprises a boss element which extends through said opening and a mounting arm secured within said internal channel to said boss element and to said guidewire body.

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7/ 8. (Previously presented) The apparatus of claim 7 wherein said stop member operating mechanism comprises an elongate cam actuator movable within the internal chamber to engage said stop unit and force said boss element to move outwardly through the opening in said guidewire body to the second expanded position of said expandable and contractable stop member.

8/ 9. (Previously presented) The apparatus of claim 8 wherein said mounting arm is formed to bias said boss unit into said internal chamber.

9/ 10. (Previously presented) The apparatus of claim 8 wherein said guidewire body comprises two opposed openings into said internal chamber, and said expandable and contractable stop member comprises a boss element extending through each said opening, each said boss element being secured within said internal chamber to a separate mounting arm secured to said guidewire within said internal chamber.

10/ 11. (Previously presented) The apparatus of claim 10 wherein said elongate cam actuator is movable between said boss elements to engage and force said boss elements outwardly through said openings.

11/ 12. (Previously presented) The apparatus of claim 11 wherein the mounting arm for each boss element is formed to bias said boss element into said internal chamber.

12/13. (Previously presented) The apparatus of claim 6 wherein said expandable and contractable stop member comprises at least one elongate strip of material which engages said stop member operating mechanism within said internal chamber and is extendable thereby through said at least one opening in said guidewire.

13/14. (Previously presented) The apparatus of claim 13 wherein said strip of material is spring metal.

14/15. (Previously presented) The apparatus of claim 13 wherein said strip of material is formed of temperature responsive shape memory material.

15/16. (Previously presented) The apparatus of claim 5 wherein said expandable and retractable stop member comprises at least one barb having a first end secured externally to said guidewire body, said barb being formed to normally extend from said first end angularly outward from said guidewire to a second end of said barb, said guidewire body comprising at least one opening formed to extend into said internal chamber, and said stop member operating mechanism comprising an elongate tether connected to the second free end of said barb and extending through said opening into said internal chamber.

16/17. (Previously presented) The apparatus of claim 16 wherein said barb is formed of flexible material which biases said barb angularly outward from said guidewire body, said tether operating to draw the second end of said barb against the bias toward said guidewire body.

17/18. (Previously presented) The apparatus of claim 2 wherein said guidewire body is formed with an internal chamber extending from the proximal end of the guidewire body toward the distal end thereof, said expandable and contractable stop member comprising an inflatable unit secured externally to said guidewire body, said guidewire body comprising at least one opening connecting said internal chamber to said inflatable unit.

18/19. (Previously presented) An elongate guidewire for use with a free, unsecured intravascular device comprising an expanded configuration for contact with the inner wall of a blood vessel and an elongate, enclosed, open ended channel comprising a channel inner dimension for receiving said guidewire, said guidewire comprising:

an elongate, flexible body extending along a longitudinal axis between a proximal end and a distal end, said flexible body comprising an outer dimension which is less than the inner

dimension of said channel to permit free movement of said guidewire relative to said intravascular device within said channel along the longitudinal axis of said guidewire, and

an expandable and contractable stop member mounted on said guidewire body for movement between a first contracted position and a second expanded position, said expandable and contractable stop member being dimensioned in the first contracted position to move through said channel and being dimensioned in the second expanded position thereof to comprise an outer dimension which is greater than the inner dimension of said channel.

19 20. (Previously presented) The guidewire of claim 19 wherein said expandable and contractable stop member comprises a thin walled body member mounted upon and surrounding said guidewire and dimensioned to pass with said guidewire through said channel in the first contracted position of said contractable stop member, said thin walled body member comprising a body member distal end portion secured to said guidewire and a sliding portion extending toward the proximal end of said guidewire, said sliding portion being longitudinally slidable relative to said guidewire toward the distal end of said guidewire to cause the thin walled body member to bow outwardly from said guidewire adjacent to the body member distal end portion to form the second expanded position of said expandable and contractable stop member.

20 21. (Previously presented) The guidewire of claim 19 wherein said guidewire is formed with an internal chamber extending from the proximal end of said guidewire toward said distal end thereof, and a stop member operating mechanism is mounted in said internal chamber to move said expandable and contractable stop member between said first contracted and second expanded positions.

21 22. (Previously presented) The guidewire of claim 21 wherein said guidewire body comprises at least one opening formed to extend into said internal chamber, said expandable and contractable stop member comprising at least one stop unit retractable through said opening into said internal chamber to the first contractable position of expandable and contractable stop member and extendable outwardly through said opening to the second expanded position of said expandable and contractable stop member.

223. (Previously presented) The guidewire of claim 22 wherein said at least one stop unit comprises a boss element which extends through said opening and a mounting arm secured within said internal channel to said boss element and to said guidewire body.

23 24. (Previously presented) The guidewire of claim 23 wherein said stop member operating mechanism comprises an elongate cam actuator movable within the internal chamber to engage said stop unit and force said boss element to move outwardly through the opening in said guidewire body to the second expanded position of said expandable and contractable stop member.

24 25. (Previously presented) The guidewire of claim 24 wherein said mounting arm is formed to bias said boss unit into said internal chamber.

25 26. (Previously presented) The guidewire of claim 22 wherein said expandable and contractable stop member comprises at least one elongate strip of material which engages said stop member operating mechanism within said internal chamber and is extendable thereby through said at least one opening in said guidewire.

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26 27. (Previously presented) The guidewire of claim 21 wherein said expandable and retractable stop member comprises at least one barb having a first end secured externally to said guidewire body, said barb being formed to normally extend from said first end angularly outward from said guidewire to a second end of said barb, said guidewire body comprising at least one opening formed to extend into said internal chamber, and said stop member operating mechanism comprising an elongate tether connected to the second free end of said barb and extending through said opening into said internal chamber.

27 28. (Previously presented) The guidewire of claim 27 wherein said barb is formed of flexible material which biases said barb angularly outward from said guidewire body, said tether operating to draw the second end of said barb against the bias toward said guidewire body.

30 29. (Previously presented) A guidewire for introducing an intravascular device in a patient's body, comprising:

an elongate body extending along a longitudinal axis between a proximal end and a distal end; and,

an expandable and contractable stop member mounted thereon which is movable between a first contracted position and a second expanded position, said expandable and contractable stop member being dimensioned to pass through a channel in said intravascular device in the first contracted position and being dimensioned in the second expanded position to comprise an outer dimension which is greater than the inner dimension of said channel and said elongate body comprising an outer dimension which is less than the inner dimension of said channel to permit free movement of said guidewire relative to said intravascular device within said channel in opposite directions along the longitudinal axis of said guidewire. 30

31/30. (Previously presented) The guidewire of claim 29 wherein said expandable and contractable stop member is spaced from both the proximal and distal ends of said guidewire body.

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32/31. (Previously presented) The guidewire of claim 29 wherein said expandable and contractable stop member comprises a thin walled body member mounted upon and surrounding said guidewire and dimensioned to pass with said guidewire through said channel in the first contracted position of said contractable stop member, said thin walled body member comprising a body member distal end portion secured to said guidewire and a sliding portion extending toward the proximal end of said guidewire, said sliding portion being longitudinally slidable relative to said guidewire toward the distal end of said guidewire to cause the thin walled body member to bow outwardly from said guidewire adjacent to the body member distal end portion to form the second expanded position of said expandable and contractable stop member. Cont

33/32. (Previously presented) The guidewire of claim 29 wherein said guidewire is formed with an internal chamber extending from the proximal end of said guidewire toward said distal end thereof, and a stop member operating mechanism is mounted in said internal chamber to move said expandable and contractable stop member between said first contracted and second expanded positions.

36/33. (Previously presented) The guidewire of claim 32 wherein said guidewire body comprises at least one opening formed to extend into said internal chamber, said expandable and contractable stop member comprising at least one stop unit retractable through said opening into said internal chamber to the first contractable position of said expandable and

contractable stop member and extendable outwardly through said opening to the second expanded position of said expandable and contractable stop member.

34. (Previously presented) The guidewire of claim 33 wherein said at least one stop unit comprises a boss element which extends through said opening and a mounting arm secured within said internal channel to said boss element and to said guidewire body.

35. (Previously presented) The guidewire of claim 34 wherein said stop member operating mechanism comprises an elongate cam actuator movable within the internal chamber to engage said stop unit and force said boss element to move outwardly through the opening in said guidewire body to the second expanded position of said expandable and contractable stop member.

36. (Previously presented) The guidewire of claim 35 wherein said mounting arm is formed to bias said boss unit into said internal chamber.

37. (Previously presented) The guidewire of claim 35 wherein said guidewire body comprises two opposed openings into said internal chamber, and said expandable and contractable stop member comprises a boss element extending through each said opening, each said boss element being secured within said internal chamber to a separate mounting arm secured to said guidewire within said internal chamber.

38. (Previously presented) The guidewire of claim 37 wherein said elongate cam actuator is movable between said boss elements to engage and force said boss elements outwardly through said openings.

39. (Previously presented) The guidewire of claim 38 wherein the mounting arm for each boss element is formed to bias said boss element into said internal chamber.

40. (Previously presented) The guidewire of claim 33 wherein said expandable and contractable stop member comprises at least one elongate strip of material which engages said stop member operating mechanism within said internal chamber and is extendable thereby through said at least one opening in said guidewire.

41. (Previously presented) The guidewire of claim 40 wherein said strip of material is spring metal.

39/42. (Previously presented) The guidewire of claim 40 wherein said strip of material is formed of temperature responsive shape memory material. 37

34/43. (Previously presented) The guidewire of claim 32 wherein said expandable and retractable stop member comprises at least one barb having a first end secured externally to said guidewire body, said barb being formed to normally extend from said first end angularly outward from said guidewire to a second end of said barb, said guidewire body comprising at least one opening formed to extend into said internal chamber, and said stop member operating mechanism comprising an elongate tether connected to the second free end of said barb and extending through said opening into said internal chamber. 33

35/44. (Previously presented) The guidewire of claim 43 wherein said barb is formed of flexible material which biases said barb angularly outward from said guidewire body, said tether operating to draw the second end of said barb against the bias toward said guidewire body. 34

46/45. (Previously presented) The guidewire of claim 29 wherein said guidewire body is formed with an internal chamber extending from the proximal end of the guidewire body toward the distal end thereof, said expandable and contractable stop member comprising an inflatable unit secured externally to said guidewire body, said guidewire body comprising at least one opening connecting said internal chamber to said inflatable unit. 30

28/46. (New) The apparatus of claim 6 wherein said stop member comprises at least one grappling hook. C) Cont

29/47. (New) The guidewire of claim 19 wherein said stop member comprises at least one grappling hook. 18

47/48. (New) The guidewire of claim 29 wherein said stop member comprises at least one grappling hook. 30